

Notice of Allowability

Application No.

10/711,890

Examiner

Allen C. Ho

Applicant(s)

YASUNAGA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an applicant-initiated telephone interview on 30 November 2006.
2. ☒ The allowed claim(s) is/are 1,2,6-8,10,12-14,16,19 and 20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 20060825
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Timothy J. Ziolkowski (Reg. No. 38,368) on 30 November 2006.

The claims have been amended as follows:

1. (Currently Amended~~Previously presented~~) A CT detector comprising:
 - a scintillator module including at least one scintillator configured to be impinged with radiographic energy from a radiographic energy source;
 - at least one indexing pin connected to the scintillator module; and
 - a collimator assembly having a plurality of collimator elements and a plurality of teeth configured to define a relative position of the plurality of collimator elements and a portion ~~thereof~~ of the plurality of teeth configured to engage the at least one indexing pin, and wherein at least two of the plurality of teeth are constructed to flank an indexing pin.
8. (Currently Amended~~Previously Presented~~) A scintillator-collimator combination comprising:
 - a plurality of collimator elements configured to collimate x-rays projected thereat;

a scintillator module having a scintillator pack formed of a material configured to illuminate upon reception of x-rays; and

a comb having a plurality of teeth constructed to align the plurality of collimator elements and constructed to engage the collimator module and align the scintillator module relative to the plurality of collimator elements; and

wherein the scintillator module further comprises a locating pin constructed to snugly engage a recess of the comb, wherein the recess is defined between two of the plurality of teeth.

9. (~~Canceled~~Previously Presented) ~~The scintillator-collimator combination of claim 8 wherein the scintillator module further comprises a locating pin constructed to snugly engage a recess of the comb, wherein the recess is defined between two of the plurality of teeth.~~

10 (Currently Amended~~Original~~) The scintillator-combination of claim 9 wherein the locating pin is configured to align the scintillator pack with respect to the plurality of collimator elements such that the scintillator module does not overlap two collimator elements spaced apart from one another a distance equal to a width of the scintillator module.

14. (Currently Amended~~Original~~) A CT system comprising:

a rotatable gantry having a bore centrally disposed therein;

a table movable fore and aft through the bore and configured to position a subject for CT data acquisition;

a high frequency electromagnetic energy projection source positioned within the rotatable gantry and configured to project high frequency electromagnetic energy toward the subject; and

a detector array disposed within the rotatably gantry and configured to detect high frequency electromagnetic energy projected by the projection source and impinged by the subject, the detector array including:

a plurality of scintillator modules, each having a scintillator array and an indexing pin;

a collimator assembly having a plurality of collimator plates; and

a detector support having at least one comb of alignment teeth, the alignment teeth constructed to align the plurality of collimator plates; and constructed to engage an indexing pin to align a scintillator array with the plurality of collimator plates.

Allowable Subject Matter

2. Claims 1, 2, 6-8, 10, 12-14, 16, 19, and 20 are allowed.
3. The following is an examiner's statement of reasons for allowance:

With regard to claims 1, 2, 6, and 7, the prior art discloses a CT detector that comprises: a scintillator module including at least one scintillator; at least one indexing pin connected to the scintillator module; and a collimator assembly having a plurality of collimator elements and a plurality of teeth configured to define a relative position of the plurality of collimator elements. However, the prior art fails to disclose a collimator assembly having a plurality of collimator elements and a plurality of teeth configured to define a relative position of the plurality of collimator elements and a portion of the plurality of teeth configured to engage the at least one indexing pin, and wherein at least two of the plurality of teeth flank an indexing pin as claimed.

With regard to claims 8, 10, 12, and 13, the prior art discloses a scintillator-collimator combination that comprises: a plurality of collimator elements configured to collimate x-rays projected thereat; a scintillator module having a scintillator pack formed of a material configured to illuminate upon reception of x-rays; a comb having a plurality of teeth constructed to align the plurality of collimator elements and constructed to engage the collimator module and align the scintillator module relative to the plurality of collimator elements; and wherein the scintillator module further comprises a locating pin constructed to snugly engage a recess of the comb. However, the prior art fails to disclose a locating pin constructed to engage a recess defined between two of the plurality of teeth as claimed.

With regard to claims 14, 16, and 19, the prior art disclose a CT system that comprises: a rotatable gantry having a bore centrally disposed therein; a table movable fore and aft through the bore and configured to position a subject for CT data acquisition; a high frequency electromagnetic energy projection source positioned within the rotatably gantry and configured to project high frequency electromagnetic energy toward the subject; and a detector array disposed within the rotatably gantry and configured to detect high frequency electromagnetic energy projected by the projection source and impinged by the subject, the detector array including: a plurality of scintillator modules, each having a scintillator array and an indexing pin; a collimator assembly having a plurality of collimator plates; and a detector support having at least one comb of alignment teeth, the alignment teeth constructed to align the plurality of collimator plates. However, the prior art fails to disclose a detector support having at least one comb of alignment teeth, the alignment teeth engage an indexing pin to align a scintillator array with the plurality of collimator plates as claimed.

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With regard to claim 20, the prior art discloses a method of manufacturing a CT detector, the method comprises the steps of: providing a scintillator array having at least one locator extending beyond the scintillator array; and providing a comb having a plurality of teeth constructed to define a spacing between collimating elements of a collimator. However, the prior art fails to disclose the step of positioning the at least one locator between at least two of the plurality of teeth as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Allen C. Ho, Ph.D.
Primary Examiner
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06 December 2006